SUPREME COURT OF THE UNITED STATES.

Nos. 55 and 64.—October Term, 1929.

The United Railways and Electric Company of Baltimore, Appellant,
55
vs.
Harold E. West, Chairman, and J. Frank Harper and Steuart Purcell, Members, Constituting the Public Service Commission of Maryland.

Harold E. West, Chairman, and J. Frank Harper and Steuart Purcell, Members, Constituting the Public Service Commission of Maryland, Appellants,
64
vs.
The United Railways and Electric Company of Baltimore.

Appeals from the Court of Appeals of the State of Maryland.

[January 6, 1930.]

Mr. Justice Sutherland delivered the opinion of the Court.

The first of these titles (No. 55) is an appeal, and the second (No. 64) a cross-appeal, from a decree of the Court of Appeals of Maryland. The case arose from an order of the state Public Service Commission limiting the rate of passenger fares to be charged by the United Railways and Electric Company for carrying passengers over its lines in the City of Baltimore. The company, by its appeal, attacks the commission's order as confiscatory. The cross-appeal seeks to raise the question whether the amount for annual depreciation allowed the company should be calculated upon the present value of the company's property or upon its cost.

Upon application of the company to the commission, made in 1927, for an increase in fares, the commission passed an order making an increase, but not to the extent sought. Thereupon, suit was brought in a state circuit court on the grounds that the

rate fixed by the commission was confiscatory and that the annual allowance for depreciation was calculated upon a wrong basis, namely, upon cost, instead of present value of depreciable property. The circuit court, in an able opinion, sustained the company upon both grounds, and enjoined the enforcement of the commission's order. On appeal, the court of appeals upheld the view of the circuit court in respect of depreciation, but held the rate of return not confiscatory. 155 Md. 572. Thereupon, the commission increased the depreciation allowance in accordance with the decree of the court and adjusted the rate of fare to the extent necessary to absorb the increased allowance. A second suit and an appeal to the court of appeals followed, and that court entered a decree, — Md. —; 145 Atl. 340, sustaining the action of the commission; and it is that decree which is here for review.

The facts, so far as we find it necessary to review them, are not in dispute. The company since 1899 has owned and operated all the street railway lines in the City of Baltimore. Its present capital structure consists of $24,000,000 of common stock, $38,000,000 of ordinary bonded indebtedness, and $14,000,000 of perpetual income bonds redeemable at the option of the company after 1949. Due to the increased use of automobiles, the total number of passengers carried has for some time steadily decreased, while the number carried during the "rush hours" has increased. This has resulted in an increase of expenses in proportion to the whole number of passengers carried, since equipment, etc., must be maintained and men employed sufficient to care for the increased business of the "rush hours," notwithstanding their reduced productiveness during the hours of decreased business. Since the war operating expenses have almost if not quite doubled.

The present value of the property used was fixed by the commission at $75,000,000, and this amount was accepted without question by both parties in the state circuit court and in the court of appeals. Included in this valuation is $5,000,000 for easements in the streets of Baltimore. The court of appeals had held in another and earlier case, *Miles* v. *Pub. Serv. Comm.*, 151 Md. 337, that the easements constituted an interest in real estate and that in making up the rate base their value should be included. The commission in the present case, accordingly, included the amount in the valuation and made no attack upon the item in the courts below, where it passed as a matter not in dispute. The item is now

challenged by counsel for the commission in this Court, and other objections to the valuation are suggested, likewise for the first time. We do not find it necessary to consider this challenge or these objections, for, if they ever possessed substance, they come too late. In the further consideration of the case, therefore, we accept, for all purposes, the valuation of $75,000,000 as it was accepted and acted upon by parties, commission and courts below.

The commission fixed a rate of fare permitting the company to earn a return of 6.26 per cent. on this valuation; and, so far as No. 55 is concerned, the case resolves itself into the simple question whether that return is so inadequate as to result in a deprivation of property in violation of the due process of law clause of the Fourteenth Amendment. In answering that question, the fundamental principle to be observed is that the property of a public utility, although devoted to the public service and impressed with a public interest, is still private property; and neither the corpus of that property nor the use thereof constitutionally can be taken for a compulsory price which falls below the measure of just compensation. One is confiscation no less than the other.

What is a fair return within this principle cannot be settled by invoking decisions of this Court made years ago based upon conditions radically different from those which prevail today. The problem is one to be tested primarily by present day conditions. Annual returns upon capital and enterprise, like wages of employees, cost of maintenance and related expenses, have materially increased the country over. This is common knowledge. A rate of return upon capital invested in street railway lines and other public utilities which might have been proper a few years ago no longer furnishes a safe criterion either for the present or the future. *Lincoln Gas Co.* v. *Lincoln*, 250 U. S. 256, 268. Nor can a rule be laid down which will apply uniformly to all sorts of utilities. What may be a fair return for one may be inadequate for another, depending upon circumstances, locality and risk. *Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19, 48-50. The general rule recently has been stated in *Bluefield Co.* v. *Pub. Serv. Comm.*, 262 U. S. 679, 692-695:

"What annual rate will constitute just compensation depends upon many circumstances and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to

earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.

. . . . . .

"Investors take into account the result of past operations, especially in recent years, when determining the terms upon which they will invest in such an undertaking. Low, uncertain or irregular income makes for low prices for the securities of the utility and higher rates of interest to be demanded by investors. The fact that the company may not insist as a matter of constitutional right that past losses be made up by rates to be applied in the present and future tends to weaken credit, and the fact that the utility is protected against being compelled to serve for confiscatory rates tends to support it. In this case the record shows that the rate of return has been low through a long period up to the time of the inquiry by the commission here involved."

What will constitute a fair return in a given case is not capable of exact mathematical demonstration. It is a matter more or less of approximation about which conclusions may differ. The court in the discharge of its constitutional duty on the issue of confiscation must determine the amount to the best of its ability in the exercise of a fair, enlightened and "independent judgment as to both law and facts." *Ohio Valley Co.* v. *Ben Avon Borough*, 253 U. S. 287, 289; *Bluefield Co.* v. *Pub. Serv. Comm., supra*, pp. 689, 692; *Lehigh Valley R. R.* v. *Commissioners*, 278 U. S. 24, 36.

There is much evidence in the record to the effect that in order to induce the investment of capital in the enterprise or to enable the company to compete successfully in the market for money to finance its operations, a net return upon the valuation fixed by the commission should be not far from 8 per cent. Since 1920 the company has borrowed from time to time some $18,000,000, upon which it has been obliged to pay an average rate of interest ranging

well over 7 per cent. and this has been the experience of street railway lines quite generally. Upon the valuation fixed, with an allowance for depreciation calculated with reference to that valuation, and upon the then prescribed rates, the company for the years 1920 to 1926, both inclusive, obtained a return of little more than 5 per cent. per annum. It is manifest that just compensation for a utility, requiring for efficient public service skillful and prudent management as well as use of the plant, and whose rates are subject to public regulation, is more than current interest on mere investment. Sound business management requires that after paying all expenses of operation, setting aside the necessary sums for depreciation, payment of interest and reasonable dividends, there should still remain something to be passed to the surplus account; and a rate of return which does not admit of that being done is not sufficient to assure confidence in the financial soundness of the utility to maintain its credit and enable it to raise money necessary for the proper discharge of its public duties. In this view of the matter, a return of 6.26 per cent. is clearly inadequate. In the light of recent decisions of this Court and other Federal decisions, it is not certain that rates securing a return of 7½ per cent. or even 8 per cent. on the value of the property would not be necessary to avoid confiscation.* But this we need not decide, since the company itself sought from the commission a rate which it appears would produce a return of about 7.44 per cent., at the same time insisting that such return fell short of being adequate. Upon the present record, we are of opinion that to enforce rates producing less than this would be confiscatory and in violation of the due process clause of the Fourteenth Amendment.

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*See, for example, *Galveston Elec. Co.* v. *Galveston*, 258 U. S. 388, 400; *Brush Elec. Co.* v. *Galveston*, 262 U. S. 443; *City of Fort Smith* v. *Southwestern Bell Tel. Co.*, 270 U. S. 627, affirming *per curiam Southwestern Bell Tel. Co.* v. *City of Fort Smith*, 294 Fed. 102, 108; *Patterson* v. *Mobile Gas Co.*, 271 U. S. 131, affirming in part *Mobile Gas Co.* v. *Patterson*, 293 Fed. 208, 221; *McCardle* v. *Indianapolis Co.*, 272 U. S. 400, 419 and note; *Ottinger* v. *Brooklyn Union Co.*, 272 U. S. 579, modifying and affirming *Kings County Lighting Co.* v. *Prendergast*, 7 F. (2d) 192, and *Brooklyn Union Gas Co.* v. *Prendergast*, 7 F. (2d) 628; *R. R. Commission* v. *Duluth St. Ry.*, 273 U. S. 625, affirming *Duluth St. Ry. Co.* v. *Railroad and Warehouse Commission*, 4 F. (2d) 543; *City of Minneapolis* v. *Rand*, 285 Fed. 818, 830; *New York Telephone Co.* v. *Prendergast*, 300 Fed. 822, 826; *Id.*, 11 F. (2d) 162, 163; *New York & Richmond Gas Co.* v. *Prendergast*, 10 F. (2d) 167, 209.

Complaint also is made of the action of the commission in abolishing the second fare zone established by the company on what is called the Halethorpe line and substituting a single fare for the two fares theretofore exacted. Halethorpe is an unincorporated community lying outside the limits of Baltimore city. With a single fare, the extension of the line to Halethorpe is not profitable, but, nevertheless, it is an integral part of the railway system, and it will be enough if the commission shall so readjust the fares as to yield a fair return upon the property, including the Halethorpe line, as a whole. If, in doing so, the commission shall choose, not to restore the second fare, but to retain in force the single fare, we perceive no constitutional objection.

The commission sought a review of the question in respect of the annual depreciation allowance, both by a cross-appeal and, later, by petition for certiorari. The question of jurisdiction on the cross-appeal as well as the consideration of the petition for certiorari were postponed to the hearing on the merits. We do not now find it necessary to decide either matter. As the amount of depreciation to be allowed was contested throughout, is a necessary element to be determined in fixing the rate of fare and is closely related in substance to the case brought here by the company's appeal, it well may be considered in conection therewith. In these circumstances neither cross-appeal nor certiorari is necessary to present the question.

The allowance for annual depreciation made by the commission was based upon cost. The court of appeals held that this was erroneous and that it should have been based upon present value. The court's view of the matter was plainly right. One of the items of expense to be ascertained and deducted is the amount necessary to restore property worn out or impaired, so as continuously to maintain it as nearly as practicable at the same level of efficiency for the public service. The amount set aside periodically for this purpose is the so-called depreciation allowance. Manifestly, this allowance cannot be limited by the original cost, because, if values have advanced, the allowance is not sufficient to maintain the level of efficiency. The utility "is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning." *Knoxville* v. *Water Co.*, 212 U. S. 1, 13-14. This naturally calls for expenditures equal to the cost

the worn out equipment at the time of replacement; and this, all practical purposes, means present value. It is the settled e of this Court that the rate base is present value, and it would wholly illogical to adopt a different rule for depreciation. As Supreme Court of Michigan, in *Utilities Commission* v. *Tele-ne Co.*, 228 Mich. 658, 666, has aptly said: "If the rate base present fair value, then the depreciation base as to depreciable perty is the same thing. There is no principle to sustain a ding that a utility may earn on the present fair value of its perty devoted to public service, but that it must accept and public must pay depreciation on book cost or investment cost ardless of present fair value. We repeat, the purpose of per-tting a depreciation charge is to compensate the utility for prop-y consumed in service, and the duty of the commission, guided experience in rate making, is to spread this charge fairly over e years of the life of the property." And see *S. W. Tel. Co.* v. *b. Serv. Comm.*, 262 U. S. 276, 288; *Georgia Ry.* v. *R. R. Comm.*, 2 U. S. 625, 633.

We conclude that an injunction should have been granted against e commission's order.

No. 55. Decree reversed and cause remanded for further proceedings not inconsistent with this opinion.

No. 64. Cross-appeal dismissed. Certiorari denied.

A true copy.

Test:

Clerk, Supreme Court, U. S.

UPREME COURT OF THE UNITED STATES.

Nos. 55 and 64.—October Term, 1929.

he United Railways and Electric Co., Appellant, *vs.* Harold E. West, Chairman, et al.	On Appeal from the Court of Appeals of Maryland.
arold E. West, Chairman, et al., Appellant and Petitioner, *vs.* he United Railways and Electric Co.	On Appeal from and Certiorari to the Court of Appeals of Maryland.

[January 6, 1930.]

Mr. Justice Brandeis, dissenting.

Acting under the direction of the Court of Appeals, *Public Serv- e Commission* v. *United Railways & Electric Co.*, 155 Md. 72, the Commission entered, on November 28, 1928, an order ermitting the Railways to increase its rate of fare to 10 cents cash, ur tokens for 35 cents.[1] That order was sustained in *United Rail- ays & Electric Co.* v. *West*, 145 Atl. 340, and the Railways has ap- ealed to this Court. The claim is that the order confiscates its roperty because the fare fixed will yield, according to the esti-

[1]The rate of fare on the Railways' lines had been 5 cents until 1918. Then applied for authority to increase its fares "purely as a war emergency d during the period of war conditions". Six increases have since been anted: to 6 cents on January 7, 1919, Re United Rys. & Elec. Co., P. U. R. 19C, 74; to 7 cents cash, four tokens for 26 cents, on September 30, 1919, United Rys. & Elec. Co., P. U. R. 1920A, 1; to a flat 7 cents on December , 1919, Re United Rys. & Elec. Co., P. U. R. 1920A, 995; to 8 cents, two kens for 15 cents, on May 26, 1924, Re United Rys. & Elec. Co., P. U. R. 24D, 713. This was the rate of fare when, on August 1, 1927, the Railways ed with the Commission the present application for a flat 10 cent fare. In original decision thereon the Commission authorized a fare of 9 cents sh, three tokens for 25 cents, Re United Rys. & Elec. Co., P. U. R. 1928C, 4. To provide the additional revenue required by the decision of the Court Appeals concerning depreciation, the Commission then raised the fare to cents cash, four tokens for 35 cents, Re United Rys. & Elec. Co., P. U. R. 29A, 180. The ilways is still seeking to secure a flat 10 cent fare. The ilways had by order of the Commission been protected from jitney com- tition. See P. U. R. 1928C, 604, 632.

mates, no more than 6.26 per cent. upon the assumed value. There are several reasons why I think the order should be held valid.

A net return of 6.26 per cent. upon the present value of the property of a street railway enjoying a monopoly in one of the oldest, largest and richest cities on the Atlantic Seaboard would seem to be compensatory. Moreover, the estimated return is in fact much larger, if the rules which I deem applicable are followed. It is 6.70 per cent. if, in valuing the rate base, the prevailing rule which eliminates franchises from a rate base is applied. And it is 7.78 per cent. if also, in lieu of the deduction for depreciation ordered by the Court of Appeals, the amount is fixed, either by the method of an annual depreciation charge computed according to the rules commonly applied in business, or by some alternative method, at the sum which the long experience of this railway proves to have been adequate for it.

First. The value of the plant adopted by the Commission as the rate base was fixed by it at $75,000,000 in a separate valuation case, decided on March 9, 1926, modified, pursuant to directions of the Court of Appeals,[2] on February 1, 1928, and not before us for review, *Re United Railways & Electric Co.*, P. U. R. 1926C, 441, P. U. R. 1928B, 737. Included in this total is $5,000,000 representing the value placed upon the Railways' so-called "easements." If they are excluded, the estimated yield found by the Commission would be increased by .44 per cent. That is, the net earnings, estimated at $4,691,606 would yield, on a $70,000,000 rate base, 6.70 per cent. The People's Counsel contended that since these "easements" are merely the privileges gratuitously granted to the Railways by various county and municipal franchises to lay tracks and operate street cars on the public highways,[3] they should be excluded from the rate base when considering whether the order is confiscatory in violation of the Federal Constitution. This alleged error of federal law in the valuation may be considered on this appeal. For, the rate allowed by the Commission is attacked on the assumption that the return on the property is only 6.26 per cent.[4]

[2]Miles v. Public Service Comm., 151 Md. 337.

[3]A small part of these "easements" are privileges granted by franchises to operate street cars on portions of the streets which the public uses only at intersections with other streets.

[4]The Commission's opinions and orders in the valuation proceeding are referred to in the several pleadings and are printed as part of the record in this case.

Compare *United States* v. *American Ry. Express Co.*, 265 U. S. 425, 435; *Union Tool Co.* v. *Wilson*, 259 U. S. 107, 111.

Where a rate order is alleged to be void under the Federal Constitution because confiscatory, the question whether a specific class of property should be included in the rate base is to be determined not by the state law, but by the federal law. Whether the return is sufficient under the state law is a question which does not concern us. We are concerned solely with the adequacy or inadequacy of the return under the guarantees of the federal law. In determining whether a prescribed rate is confiscatory under the Federal Constitution, franchises are not to be included in valuing the plant, except for such amounts as were actually paid to the State, or a political subdivision thereof, as consideration for the grant. *Cedar Rapids Gas Light Co.* v. *Cedar Rapids*, 223 U. S. 655, 669; *Des Moines Gas Co.* v. *Des Moines*, 238 U. S. 153, 169; *Galveston Electric Co.* v. *Galveston*, 258 U. S. 388, 396; *Georgia Ry. & Power Co.* v. *Railroad Commission*, 262 U. S. 625, 632[5]. Franchises to lay pipes or tracks in the public streets, like franchises to conduct the business as a corporation, are not donations to a utility of property by the use of which profit may be made. They are privileges granted to utilities to enable them to employ their property in the public service and make profit out of such use of that property. As stated in the New Hampshire statute, "all such franchises, rights and privileges being granted in the public interest only" are "not justly subject to capitalization against the public."[6]

Had the "easements" been called franchises it is probable that no value would have been ascribed to them for rate-making purposes. For the Maryland public utilities law, in common with the statutes of many States,[7] forbids the capitalization of franchises.

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[5]Also Westinghouse El. & Mfg. Co. *v.* Denver Tramway Co., 3 F. (2d) 285, 302, affirmed sub nom. City and County of Denver *v.* Denver Tramway Co., 23 F. (2d) 287; Pub. Util. Comm. *v.* Capital Traction Co., 17 F. (2d) 673, 675-6; Re Capital City Telegraph Co., P. U. R. 1928D, 763, 766, 776 (Mo.); Re Tracy Gas Co., P. U. R. 1927C, 177, 181 (Cal.), Re Southern Pacific Co., P. U. R. 1926A, 298, 303; Re Potomac Electric Power Co., 1917D, 563, 680. No case has been found which accepts the rule laid down by the Court of Appeals.

[6]*New Hampshire*—P. L. 1926, Vol. 2, ch. 241, § 10, p. 943.

[7]*Arizona*—Rev. Stat. 1913, § 2328(b), p. 811; *California*—Public Utilities Law, § 52b, Deering Codes & Gen. L. Supp. 1925-1927, Act 6386, § 52(b), p. 1811; *Idaho*—Comp. Stat. 1919, Vol. 1, § 4290, p. 1221; *Illinois*—Cahill's

But calling these privileges "easements" does not differentiate them for rate purposes from ordinary corporate franchises, when applying the Federal Constitution. In none of the cases excluding franchises from plant value was any distinction made, in this respect, between ordinary corporate franchises and franchises to use the public streets, although many of the cases involved privileges of the latter type. The Court of Appeals and the Commission were influenced by the fact that the so-called "easements" were taxed. This fact does not justify including them in the rate base. Corporate franchises are frequently taxed;[8] and although taxed, are not valued for rate purposes. Compare *Georgia Ry. & Power Co.* v. *Railroad Commission,* 278 Fed. 242, 244-5. The "easements" differ from ordinary franchises only in the technicality that, under the law of Maryland, the right to use the streets is, for taxation purposes, real property, whereas ordinary franchises are personal property.

Second. The amount which the Commission fixed, in its original report, as the appropriate depreciation charge was $883,544. That sum is 5 per cent. of the estimated gross revenues. Referring to the method of arriving at the amount of the charge the Commission there said: "The Commission believes that it might be more logical to base the annual allowance for depreciation upon the cost of depreciable property, rather than upon gross revenues. The relation between gross revenues and depreciation is

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Rev. Stat. 1929, Ch. 11a, § 36, p. 2047; *Indiana*—Burns' Ann. Stat. 1926, Vol. 3, § 12763, p. 1258; *Maryland*—Bagby's Ann. Code, 1924, Vol. 1, Art. 23, § 381, p. 832; *Missouri*—Rev. Stat. 1919, Vol. 3, §§ 10466, 10484, 10508, pp. 3425, 3262, 3279; *Nebraska*—Comp. Stat. 1922, § 676, p. 321, amended by L. 1925, ch. 141; *New Hampshire*—P. L. 1926, Vol. 2, ch. 241, § 10, p. 943; *New Jersey*—1911-1924, Cum. Supp. to Comp. Stat. Vol. 2, *167-24, p. 2886; *New York*—Cahill's Cons. L. 1923, ch. 49, §§ 69, 101, pp. 1746, 1759; 1929 Supp. ch. 49, §§ 55, 82, pp. 282, 283; *Pennsylvania*—Stat. 1920 (West Pub. Co.) § 18095, p. 1745. Some of the statutes, in addition to prohibiting the capitalization of franchises, specifically direct that no franchise shall be valued for rate-making purposes: *Iowa*—Code 1927, § 8315, p. 1076; *Minnesota*—Gen. Stat. 1923, Chap. 28, § 4823, p. 683; § 5304, p. 733; *North Dakota*—Supp. to Comp. Laws, 1913-1925, ch. 13B, § 4609c37, p. 969; § 4609c40, p. 971; *Ohio*—Throckmorton's Ann. Code, 1929, §§ 614-23, 614-46, 614-59, pp. 158, 160, 164; *Wisconsin*—Stat. 1925, Vol. 1, 184.15, p. 1446.

[8]Society For Savings *v.* Coite, 6 Wall. 594; Cream of Wheat Co. *v.* Grand Forks, 253 U. S. 325, 328;; Roberts & Schaefer Co. *v.* Emmerson, 271 U. S. 50, 55.

remote and indirect while there is a direct relation between the cost of a piece of property and the amount that ought to be set aside for its consumption by use. However, the allowance which this Commission has made for depreciation, 5 per cent of the gross revenues, has provided fairly well for current depreciation and retirements . . . Moreover, there is a broad twilight zone between depreciation and maintenance, and it may well be (and without any impropriety) that the maintenance account has been used to a certain extent to provide for depreciation. . . Any increase in the gross revenues resulting from an increase in fares would increase the amounts that would be set aside for depreciation and maintenance."[9] Without deciding that this allowance was inadequate, the Court of Appeals held that, as a matter of law, the depreciation charge should be based upon the then value of the depreciable property as distinguished from its cost; and directed the Commission to revise its estimates accordingly. Pursuant to that direction, the Commission added, in its supplemental report, $755,116 to the depreciation charge. The addition was, I think, ordered by the Court of Appeals under a misapprehension of the nature and function of the depreciation charge. And, in considering the adequacy of the return under the Federal Constitution, the estimate of the net earnings should accordingly be increased by $755,116, which, on the rate base of $70,000,000, would add 1.08 per cent. to the estimated return.

That the Court of Appeals erred in its decision becomes clear when the nature and purpose of the depreciation charge are analyzed and the methods of determining its proper amount are considered. The annual account of a street railway, or other business, is designed to show the profit or loss, and to acquaint those interested with the condition of the business. To be true, the account must reflect all the operating expenses incurred within the accounting period. One of these is the wearing out of plant. Minor parts, which have short lives and are consumed wholly within the year, are replaced as a part of current repairs.[10] Larger plant

[9]P. U. R. 1928C, 604, 637, 640, 641.

[10]Compare Classification of Operating Revenues and Operating Expenses of Steam Roads prescribed by Interstate Commerce Commission, issue of 1914, Special Instructions No. 2, p. 31. As to practice of the telephone companies (Bell system), see testimony on rehearing of Telephone and Railroad Depreciation Charges, 118 I. C. C. 295, Docket Nos. 14700 and 15100, L. G. Woodford, March 19, 1928 (Printed by American Tel. & Tel. Co.), pp. 52-3.

units, unlike supplies, do not wear out within a single accounting period. They have varying service lives, some remaining useful for many years. Experience teaches that at the end of some period of time most of these units, too, will wear out physically or cease to be useful in the service. If the initial outlay for such units is entirely disregarded, the annual account will not reflect the true results of operation and the initial investment may be lost. If, on the other hand, this original expense is treated as part of the operating expenses of the year in which the plant unit was purchased, or was retired or replaced, the account again will not reflect the true results of operation. For operations in one year will then be burdened with an expense which is properly chargeable against a much longer period of use. Therefore, in ascertaining the profits of a year, it is generally deemed necessary to apportion to the operations of that year a part of the total expense incident to the wearing out of plant. This apportionment is commonly made by means of a depreciation charge.[11]

It is urged by the Railways that if the base used in determining what is a fair return on the use of its property is the present value, then logically the base to be used in determining the depreciation charge—a charge for the consumption of plant in service—must also be the present value of the property consumed.[12] Much that

[11]The depreciation charge or allowance is the annual or monthly amount thus apportioned as the year's equitable share of the expense of ultimate retirement of plant. The yearly charge is by many concerns allocated in monthly instalments. A depreciation reserve is a bookkeeping classification to which the depreciation charges are periodically credited. A depreciation fund is a fund separately maintained in which amounts charged for depreciation are periodically deposited. A depreciation reserve does not necessarily connote the existence of a separate fund. E. A. Saliers, Depreciation, Principles and Applications (1923) 80; W. A. Paton and R. A. Stevenson, Principles of Accounting (1918) 491-505.

[12]If the depreciation charge measured the actual consumption of plant, the logic of this conclusion might seem forceful. It should be pointed out, therefore, that, apart from the fact developed in the text, that the charge does not measure the actual consumption of plant, the contention is specious. A business man investing in a long-lived plant does not expect to have its value returned to him in instalments corresponding to the loss of service life. The most that a continuing business like a street railway may expect is that, at the end of the service life, it shall be reimbursed with the then value of the original investment, or with funds sufficient to replace the plant. As will be shown presently, there is no basis for assuming that either the value of the original investment or the replacement cost will, at the end of the service life, equal or approximate the present value. See note 49, *infra*.

l said about valuation in *Southwestern Bell Tel. Co.* v. *Pub. Serv. Comm.*, 262 U. S. 276, 289 and *St. Louis & O'Fallon R. R. Co.* v. *United States*, 279 U. S. 461, 488 applies to the depreciation charge. But acceptance of the doctrine of *Smyth* v. *Ames* does not require that the depreciation charge be based on present value of plant. For, an annual depreciation charge is not a measure of the actual consumption of plant during the year. No such measure has yet been invented. There is no regularity in the development of depreciation. It does not proceed in accordance with any mathematical law. There is nothing in business experience, or in the training of experts, which enables man to say to what extent service life will be impaired by the operations of a single year, or of a series of years less than the service life.[13]

Where a plant intended, like a street railway, for continuing operation is maintained at a constant level of efficiency, it is rarely possible to determine definitely whether or not its service life has in fact lessened within a particular year. The life expectancy of a plant, like that of an individual, may be in fact greater, because of unusual repairs or other causes, at the end of a particular year than it was at the beginning.[14] And even where it is known that there has been some lessening of service life within the year, it is never possible to determine with accuracy what percentage of the unit's service life has, in fact, been so consumed. Nor is it essential to the aim of the charge that this fact should be known. The main purpose of the charge is that irrespective of the rate of depreciation there shall be produced, through annual contri-

[13] "Depreciation of physical units used in connection with public utilities, or, indeed, with any other industries, does not proceed in accordance with any mathematical law. . . . There is no regularity in the development of the increasing need for repairs; there is no regularity in the progress of depreciation; but, in order to devise a reasonable plan for laying aside allowances from year to year to make good the depreciation as it accrues, and to provide for the accumulation of a sum equivalent to the cost less salvage of a unit by the time it is retired, some theory of depreciation progress must be assumed on which such allowances may be based." 81 Am. Soc. of Civil Eng. Transactions (1917), 1311, 1462-3. Compare E. A. Saliers, *op cit.*, note 11, at p. 132.

[14] "In our valuation work they (the railroad companies) have consistently taken the position that no depreciation exists in a railroad property which is maintained in 100 per cent efficiency." Proposed Report of Interstate Commerce Commission on Telephone and Railroad Depreciation Charges, Docket No. 14700 and 15100, August 15, 1929, p. 20.

butions, by the end of the service life of the depreciable plant, an amount equal to the total net expense of its retirement.[15] To that end it is necessary only that some reasonable plan of distribution be adopted. Since it is impossible to ascertain what percentage of the service life is consumed in any year,[16] it is either assumed that depreciation proceeds at some average rate (thus accepting the approximation to fact customarily obtained through the process of averaging) or the annual charge is fixed without any regard to the rate of depreciation.

The depreciation charge is an allowance made pursuant to a plan of distribution of the total net expense of plant retirement. It is a bookkeeping device introduced in the exercise of practical judgment to serve three purposes. It preserves the integrity of the investment. Compare *Knoxville* v. *Knoxville Water Company*, 212 U. S. 1, 13-14. It serves to distribute equitably throughout the several years of service life the only expense of plant retirement which is capable of reasonable ascertainment—the known cost less the estimated salvage value. And it enables those interested, through applying that plan of distribution, to ascertain, as nearly as is possible, the actual financial results of the year's operation. Many methods of calculating the amount of the allowance are used.[17] The charges to operating expenses in the several years and in the aggregate vary according to the method

[15]Some contend "that where accruing depreciation is dependent, not upon lapse of time, but upon amount and extent of use, it is unscientific to provide for depreciation charges in equal annual installments, and that these charges should be made to correspond with units of use rather than of time. By relating the charges to units of use, they contend that the burden of the charges will be spread more equitably, to the financial advantage of the carrier, over alternating periods of light and heavy traffic." Proposed Report of the Interstate Commerce Commission, note 14, *supra*, p. 15. The practices of street railways differ in respect to the manner of laying the year's contribution to the depreciation reserve. Some lay a fixed percentage upon the gross revenues; some a number of cents per car mile; some a fixed percentage on the cost of the depreciable plant. Though expressed in different terms, the amount contemplated to be charged may in fact be based on cost. See, e. g., Re Elizabethtown Water Co., P. U. R. 1927E, 39.

[16]See testimony on rehearing of Telephone and Railroad Depreciation Charges, note 10, *supra*, A. B. Crunden, March 21, 1928 (Printed by American Tel. & Tel. Co.), pp. 108-9; Dr. M. R. Maltbie, June 27, 1928, transcript, p. 1396.

[17]See note 56, *infra*.

adopted.[18] But under none of these methods of fixing the depreciation charge is an attempt made to determine the percentage of actual consumption of plant falling within a particular year or within any period of years less than the service life.[19]

Third. The business device known as the depreciation charge appears not to have been widely adopted in America until after the beginning of this century.[20] Its use is still stoutly resisted by many concerns.[21] Wherever adopted, the depreciation charge is based on the original cost of the plant to the owner. When the great changes in price levels incident to the World War led some to question the wisdom of the practice of basing the charge on original cost, the Chamber of Commerce of the United States warned business men against the fallacy of departing from the accepted basis.[22] And that warning has been recently repeated: "When

[18]See note 55, *infra.*

[19]See E. A. Saliers, *op. cit.*, note 11, supra, at p. 132: "This method (reducing balance), . . . does not take into account either the actual rapidity with which depreciation occurs, or the various modifying factors which may show their influence at any time. Since this objection is common to all methods, other considerations will probably lead to a choice."

[20]The first case in which this Court expressly recognized a depreciation allowance as a part of operating expenses is Knoxville *v.* Knoxville Water Co., 212 U. S. 1, 13, decided in 1909. In earlier cases cognizance was not taken of it. Compare Union Pacific R. R. Co. *v.* United States, 99 U. S. 402, 420; United States *v.* Kansas Pacific Ry. Co., 99 U. S. 455, 459; San Diego Land & Town Co. *v.* Jasper, 189 U. S. 439, 446. See also Lincoln Gas Co. *v.* Lincoln, 223 U. S. 349, 363. Among street railways, the Milwaukee Electric Railway & Light Co. became the pioneer by adopting it in 1897. Others followed in 1905. 31 Street Ry. Journal 169-70; 687-8. In England, the adoption of the depreciation charge had been hastened by a provision in the income tax law. Customs and Inland Revenue Act 1878, 41 Vict. c. 15, § 12. Massachusetts Acts 1849, c. 191, provided that the annual report required of railroads should give full information on "Estimated depreciation beyond the renewals, viz: road and bridges, buildings, engines and cars." See also Act 1846, c. 251. But in Massachusetts, as elsewhere in the United States, depreciation charges have not been customary among railroads, except in respect to equipment, pursuant to the rule prescribed by the Interstate Commerce Commission in 1907.

[21]See Telephone and Railroad Depreciation Charges, 118 I. C. C. 295, 301-303; Proposed Report of August 15, 1929, note 14, *supra*, p. 5-12, 17-20; H. E. Riggs, Depreciation of Public Utility Properties (1922) 78-92.

[22]See a pamphlet "Depreciation" issued on October 15, 1921, by the Fabricated Productions Department (now the Department of Manufacture) of the Chamber of Commerce of the United States.

the cost of an asset, less any salvage value, has been recovered, the process of depreciation stops,—the consumer has paid for that particular item of service. There are those who maintain that the obligation of the consumer is one rather of replacement,—building for building, machine for machine. According to this view depreciation should be based on replacement cost rather than actual cost. The replacement theory substitutes for something certain and definite, the actual cost, a cost of reproduction which is highly speculative and conjectural and requiring frequent revision. It, moreover, seeks to establish for one expense a basis of computation fundamentally different from that used for the other expenses of doing busines. Insurance is charged on a basis of actual premiums paid, not on the basis of probable premiums three years hence; rent on the amount actually paid, not on the problematical rate of the next lease, salaries, light, heat, power, supplies are all charged at actual, not upon a future contingent cost. As one writer has expressed it, 'The fact that the plant cannot be replaced at the same cost, but only at much more, has nothing to do with the cost of its product, but only with the cost of future product turned out by the subsequent plant.' As the product goes through your factory it should be burdened with expired, not anticipated, costs. *Charge depreciation upon actual cost less any salvage.*"[23]

Such is today, and ever has been, the practice of public accountants.[24] Their statements are prepared in accordance with principles of accounting which are well established, generally accepted and uniformly applied. By those accustomed to read the language of

[23]See pamphlet "Depreciation, Treatment in Production Costs," issued by Department of Manufacture, Chamber of Commerce of the United States, No. 512 (May, 1929), p. 7. In the Foreword it is said: "In presenting this treatise on depreciation, we have drawn not only on our own resources, but also have had the co-operation of many manufacturers, industrial engineers and accountants."

[24](1904) H. L. C. Hall, Manufacturing Costs, 132; (1905) B. C. Bean, Cost of Production, 75-98; (1911) H. A. Evans, Cost Keeping and Scientific Management, 30-5; S. Walton and S. W. Gilman, Auditing and Cost Accounts (11 Modern Business) 63-70; F. E. Webner, Factory Costs, 171; (1913) R. H. Montgomery, Auditing Theory and Practice, 317-39, (1921 ed.) Vol. 1, p. 634; (1915) F. H. Baugh, Principles and Practice of Cost Accounting, 42, 46-51; (1916) C. H. Scovell, Cost Accounting and Burden Application, 81-9; (1918) H. C. Adams, American Railway Accounting, 99-100, 279; R. B. Kester, Accounting Theory and Practice, Vol. 2, 99-209, 202; (1920) I. A. Berndt, Costs, Their Compilation and Use in Management, 101-6; Hodge and McKinsey,

accounting a depreciation charge is understood as meaning the appropriate contribution for that year to the amount required to make good the cost of the plant which ultimately must be retired. On that basis, public accountants certify to investors and bankers the results of operation, whether of public utilities, or of manufacturing or mercantile concerns. Corporate securities are issued, bought and sold, and vast loans are made daily, in reliance upon statements so prepared. The compelling logic of facts which led business men to introduce a depreciation charge has led them to continue to base it on the original cost of the plant despite the great changes in the price level incident to the World War. Basing the depreciation charge on cost is a rule prescribed or recommended

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Principles of Accounting, 74-5; J. F. Sherwood, Public Accounting and Auditing, Vol. 1, 145-54; (1921) DeW. C. Eggleston and F. B. Robinson, Business Costs, 294-304; G. S. Armstrong, Essentials of Industrial Costing, 169-79; D. E. Burchell, Industrial Accounting, Series 1, No. 3, I, A. 2.d.(3); (1922) G. E. Bennett, Advanced Accounting, 212-34, 219; (1923) P. M. Atkins, Industrial Cost Accounting for Executives, 119-22; E. J. Borton, Cost Accounting Principles and Methods, 82-3; (1924) J. H. Bliss, Management Through Accounts, 304-14; W. H. Bell, Auditing, 232-40; H. P. Cobb, Shoe Factory Accounting and Cost Keeping, 232-40; C. B. Couchman, The Balance Sheet, 22-3, 49-56, 201-3; J. L. Dohr, Cost Accounting Theory and Practice, 378-87, 380; F. W. Kilduff, Auditing and Accounting Handbook, 380; E. L. Kohler and P. W. Pettengill, Principles of Auditing, 112-14; W. B. Lawrence, Cost Accounting, 308-10; A. B. Manning, Elements of Cost Accounting, 80; C. H. Scovell, Interest As A Cost, 83-4; F. E. Webner, Factory Overhead, 227; (1925) D. F. Morland and R. W. McKee, Accounting for the Petroleum Industry, 43-53; (1926) R. E. Belt, Foundry Cost Accounting, 240-3; DeW. Eggleston, Auditing Procedure, 319-20; (1927) S. Bell, Practical Accounting, 130-43; T. A. Budd and E. N. Wright, The Interpretation of Accounts, 195, 251-63, 253; H. R. Hatfield, Accounting, 145-6; (1928) C. R. Boland, Shoe Industry Accounting, 158-9; H. E. Gregory, Accounting Reports in Business Management, 158, 164-6; W. H. Hemingway, The National Financial Statement Interpreter, § 12, pp. 13-20; G. A. Prochazka, Accounting and Cost Finding for the Chemical Industries, 206-11; (1929) A. H. Church, Manufacturing Costs and Accounts, 5, 205ff; R. H. Montgomery, Auditing (Revision by W. J. Graham), 116-9; T. H. Sanders, Industrial Accounting, 144-5. See E. A. Saliers, Depreciation, Principles and Applications (1923) 56, 410, 425. At the Fourth International Cost Conference of the National Association of Cost Accountants held in Buffalo, N. Y., Sept. 10-13, 1923, the question whether depreciation charges should be based on original cost or replacement value was debated. On a vote at the close of the debate "nearly all rose" in favor of original cost. N. A. C. C. Yearbook 1923, pp. 183-201 at 201. The rule is the same in England. E. W. Newman, The Theory and Practice of Costing (1921) 20.

by those associations of business men who have had occasion since the World War to consider the subject.[25]

[25]National Coal Association, Annual Meeting at Chicago, May 21-23, 1919, Report and Suggestions of Committee on Standard System of Accounting and Analysis of Costs of Production, see also W. B. Reed, Bituminous Coal Mine Accounting, 1922, p. 119-126; Midland Club (Manufacturing Confectioners, Chicago) Official Cost Accounting and Cost Finding Plan, 1919, p. 43; United Typothetae of America: Standard Cost Finding System, pp. 4, 7, Treatise On The Practical Accounting System for Printers, 1921, p. 15, The Standard Book on Cost Finding by E. J. Koch, published by U. T. of A., pp. 13-14, Treatise on the Standard Accounting System for Printers, Interlocking With the Standard Cost Finding System, 1920, pp. 44-45; Tanners' Council: Uniform Cost Accounting System for the Harness Leather Division of the Tanning Industry, officially adopted Dec. 1, 1921, p. 31, Uniform Cost Accounting System for the Sole and Belting Leather Division of the Tanning Industry, 1921, p. 31, Uniform Cost Accounting System for the Calf, Kip, and Side Upper; Glove, Bag, and Strap; and Patent Leather Divisions of the Tanning Industry, 1922, pp. 35, 48, Uniform Cost Accounting System for the Goat and Cabretta Leather Division of the Tanning Industry, 1922, p. 27; National Retail Coal Merchants Association, Complete Uniform Accounting System for Retail Coal Merchants, 1922, Account A-120, p. 6; The Associated Knit Underwear Manufacturers of America, Cost Control for Knit Underwear Factories, 1924, p. 52; National Knitted Outerwear Association, Inc., Cost Accounting Manual for the Knitted Outerwear Industry (by W. Lutz), 1924, pp. 18-20; American Drop Forging Institute, Cost Committee, Essentials of Drop Forging Accounting, 1924, pp. 36-7; Rubber Association of America, Inc., Manual of Accounts and Budgetary Control for the Rubber Industry, by the Accounting Committee, 1926, pp. 70, 71, 75, 79, 82; Packing House Accounting, by Committee on Accounting of the Institute of American Meat Packers, 1929, p. 325; Cost Accounting for Throwsters, issued by Commission Throwsters' Division of The Silk Association of America, Inc., 1928, pp. 29-30; Cost Accounting for Broad Silk Weavers, issued by The Broad Silk Division of The Silk Association of America, Inc., 1929, pp. 44-45. As there stated: "The use of replacement cost as a basis for depreciation charges has been eliminated due to the following reasons: 1. Depreciation is charged to manufacturing cost to absorb the reduction in value of capital assets through the effect of use and time. It does not represent an accumulation for the purpose of acquiring assets in the future. 2. The replacement cost theory is impractical because it would require a constant revaluation of assets. It is, furthermore, unlikely that any manufacturer would rebuild the same plant ten years after its construction. 3. The depreciation charge absorbed in the cost of the product represents a charge for the use of present manufacturing facilities and cannot have any connection with assets to be acquired in the future. The depreciation charge on new and more efficient equipment to be acquired in the future may be higher and, perhaps, offset by a general reduction in manufacturing cost per unit. It is not logical to base all other cost elements on present expenses and make the one exception in the case of depreciation." (p. 45.)

Business men naturally took the plant at cost, as that is how they treat other articles consumed in operation. The plant, undepreciated, is commonly carried on the books at cost; and it is retired at cost. The net profit or loss of a business transaction is commonly ascertained by deducting from the gross receipts the expenditures incurred in producing them. Business men realized fully that the requirements for replacement might be more or less than the original cost. But they realized also that to attempt to make the depreciation account reflect economic conditions and changes would entail entry upon new fields of conjecture and prophecy which would defeat its purposes. For there is no basis in experience which can justify predicting whether a replacement, renewal or substitution falling in some future year will cost more or less than it would at present, or more or less than the unit cost when it was acquired.

The business men's practice of using a depreciation charge based on the original cost of the plant in determining the profits or losses of a particular year has abundant official sanction and encouragement. The practice was prescribed by the Interstate Commerce Commission in 1907,[26] when, in cooperation with the Association of American Railway Accounting Officers, it drafted the rule, which is still in force,[27] requiring steam railroads to make an annual depreciation charge on equipment. It has been consistently applied by the Federal Government in assessing taxes on net income and corporate profits;[28] and by the tax officials of the several

[26]Classification of Operating Expenses as Prescribed by the Interstate Commerce Commission, Third Revised Issue 1907, pp. 10-12, 38, 44-51.

[27]Classification of Operating Revenues and Operating Expenses of Steam Roads Prescribed by the Interstate Commerce Commission, Issue of 1914, pp. 59, 61-8. Cf. Special Instructions 8, *Id.* p. 33.

[28]Act of Oct. 3, 1913, ch. 16, Sec. II, B, 38 Stat. 114, 167, United States Internal Revenue Regulations No. 33, Jan. 5, 1914, Art. 129-146, p. 69-73; Act of Sept. 8, 1916, ch. 463, Sec. 5(a) and 6(a), 39 Stat. 756, 759, 760, Regulations No. 33 (Revised 1918), Art. 159-165, pp. 80-82; Act of Feb. 24, 1919 (Revenue Act of 1918), ch. 18, Sec. 214(a), par. (8) & (10), Sec. 234 (a), par. (7) & (9), 40 Stat. 1057, 1067-8, 1078, Regulations 45, Art. 161-171, pp. 62-66; Act of Nov. 23, 1921, ch. 136, § 214(a), par. (8) & (10), and § 234(a), par. (7) & (9), 42 Stat 227, 240, 241, 255, 256, Regulations 62, Art. 161-171, pp. 74-78; Act of June 2, 1924, ch. 234, § 214(a), par. (8) & (9) and Sec. 234(a) par. (7) & (8), 43 Stat. 253, 270-1, 284-5, Regulations 65, Art. 161-171, pp. 54-58; Act of Feb. 26, 1926, ch. 27, Sec. 214(a), par. (8) & (9) and Sec. 234(a), par. (7) & (8); 44 Stat. (Part 2), 9, 27, 42-3,

States for determining the net profits or income of individuals and corporations.[29] Since 1911, it has been applied by the United States Bureau of the Census.[30] Since 1915, it has been recommended by the Department of Agriculture.[31] Since 1917 by the Bureau of Mines.[32] In 1916, it was adopted by the Federal Trade Commission in recommendations concerning depreciation issued to manufacturers.[33] In 1917, it was prescribed by the United States Fuel Administration,[34] and by the War Ordnance Department.[35]

Regulations 69, Art. 161-170, pp. 56-60; Act of May 29, 1928, ch. 852, Sec. 23, par. (k) & (l), Sec. 113 & 114, 45 Stat. 791, 800, 818, 821, Regulations 74, Art. 201-210, pp. 51-56. See also Bureau of Internal Revenue, Bulletin "F", Income Tax, Depreciation and Obsolescence (1920) 18; Outline For The Study of Depreciation and Maintenance, prepared by the Bureau of Internal Revenue (1926).

[29]N. L. McLaren & V. K. Butler, California Tax Laws of 1929, 117ff; Prentice-Hall Massachusetts State Tax Service (Personal) 1926-28 paragraphs 13875-7, p. 13559; Mississippi Income Tax Law of 1924, (Issued by State Tax Commission), § 12(a) (8), Regulations No. 1 (1925), Art. 136-8, pp. 52-3; New York State Tax Commission Income Tax Bureau, Manual 22 (1922), Art. 171-6, p. 35-6, Manual 25 (1925), Art. 171-6, pp. 33-4, C. C. H. 1928-29, Personal Income Tax, par. 4511, p. 2793; G. R. Harper, A Digest of the Oregon State Income Tax Act and Regulations (1924), 18; Wisconsin Tax Service (Henry B. Nelson, Inc.), 1929, Vol. 1, pp. 163-4.

[30]Uniform Accounts for Systems of Water Supply, arranged by the U. S. Bureau of the Census, American Water Works Association and Others (1911) 27.

[31]U. S. Department of Agriculture, Bulletin 178, March 1, 1915, Cooperative Organization Business Methods, pp. 13-14; Bulletin 236, May 1, 1915, A System of Accounts for Farmers' Cooperative Elevators, p. 16; Bulletin 225, May 7, 1915, A System of Accounting for Cooperative Fruit Associations, p. 20; Bulletin 362, May 6, 1916, A System of Accounts for Primary Grain Elevators, p. 17; Bulletin 590, Feb. 27, 1918, A System of Accounting for Fruit Shipping Organizations, p. 23; Bulletin 985, A System of Accounting for Cotton Ginneries, 23, 27.

[32]Department of the Interior, Bureau of Mines, Bulletin 158, Petroleum Technology 43, Cost Accounting for Oil Producers, 1917, pp. 111-112; Technical Paper 250, Metal Mine Accounting, 1920, p. 26.

[33]Federal Trade Commission, Fundamentals of a Cost System for Manufacturers, July 1, 1916, 12-13.

[34]U. S. Fuel Administration, A System of Accounts for Retail Coal Dealers, Nov. 1, 1917, p. 17.

[35]War Department, Office of The Chief of Ordnance, Form 2941, Definition of "Cost" Pertaining to Contracts, June 27, 1917, pp 9-11.

In 1918, by the Air Craft Production Board.[36] In 1921, it was prescribed by the Federal Power Commission;[37] and it is continued in the revised rules of 1928.[38] In 1923, it was adopted by the depreciation section of the Interstate Commerce Commission in the report of tentative conclusions concerning depreciation charges submitted to the steam railroads, telephone companies and carriers by water,[39] pursuant to paragraph 5 of § 20, of the Interstate Commerce Act, as amended by Transportation Act, 1920.[40] On November 2, 1926, it was prescribed by the Commission in *Telephone and Railroad Depreciation Charges,* 118 I. C. C. 295. A depreciation charge based on original cost has been uniformly applied by the public utility commissions of the several States when determining net income, past or expected, for rate-making purposes.[41]

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[36]Bureau of Air-Craft Production, General Ruling No. 28, May 3, 1918, of the Rulings Board of the Finance Department to the effect that in cost plus contracts depreciation must be based on original cost and "In no case shall depreciation be based on the cost of reproduction at present prices". See E. A. Saliers, *op. cit.,* note 11, p. 56.

[37]Rules and Regulations Governing the Administration of the Federal Water Power Act (1921), Regulation 16.

[38]Rules and Regulations Governing the Administration of the Federal Water Power Act (1928), Regulation 16, pp. 31-36.

[39]Bureau of Accounts, Depreciation Section, Report of the Preliminary Investigation of Depreciation Charges in Connection with Steam Roads and the Tentative Conclusions and Recommendations of the Depreciation Section for the Regulation of Such Charges, Docket No. 15100, Aug. 23, 1923, pp. 11-13; Same for Telephone Companies, Docket No. 14700, March 10, 1923, pp. 6, 18-21.

[40]Act of Feb. 28, 1920, ch. 91, 41 Stat. 456, 493.

[41]*Illinois*—Re Middle States Telephone Co., P. U. R. 1929B, 390, 396; Re Dixon Water Co., P. U. R. 1929B, 403, 408; Re Vermont Telephone & Exchange Co., P. U. R. 1929B, 411, 415; Re East St. Louis & Interurban Water Co., P. U. R. 1928A, 57, 68; Re Pekin Water Works Co., P. U. R. 1928C, 266, 276; Re Kinloch-Bloomington Tel. Co., P. U. R. 1927E, 135, 142; *Indiana*—Re Home Tel. Co. of Elkhart County, P. U. R. 1928A, 445, 455; Re Logansport Home Tel. Co., 1928E, 714, 725; Re Butler Tel. Co., P. U. R. 1925A, 240, 242, P. U. R. 1927C, 800, 804; *Minnesota*—Re Duluth Ry. Co., P. U. R. 1927A, 41, 52, 55; *Missouri*—Re Capital City Water Co., P. U. R. 1928C, 436, 460-1; Re Clinton County Telephone Co., P. U. R. 1928B, 796, 807; Re Capital City Water Co., P. U. R. 1925D, 41, 56, 57; *Nebraska*—Re Platte Valley Tel. Corp., P. U. R. 1928C, 193, 200; Re Meadow Grove Tel. Co., 1928D, 472, 477; Re Madison Tel. Co., P. U. R. 1929B, 385, 389; *New Jersey*—Re Elizabethtown

Fourth. In 1927 the business men's practice of basing the depreciation charge on cost was applied by this Court in *United States* v. *Ludey*, 274 U. S. 295, 300-301, a federal income tax case, saying: "The amount of the allowance for depreciation is the sum which should be set aside for the taxable year, in order that, at the

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Water Co., P. U. R. 1927E, 39, 63; Re Coast Gas Co., P. U. R. 1923A, 349, 366; *New York*—Baird *v.* Burleson, P. U. R. 1920D, 529, 538; *Utah*—Re Big Spring Electric Co., P. U. R. 1927A, 655, 665-7; *Wisconsin*—Re Wisconsin-Minnesota Light & Power Co., P. U. R. 1920D, 428, 433-5; Milwaukee Electric Ry. & Light Co. *v.* Milwaukee, P. U. R. 1918E, 1, 58; but see Re Wisconsin Telephone Co., P. U. R. 1928B, 434; *West Virginia*—Re Cumberland & Allegheny Gas Co., P. U. R. 1928B, 20, 80; Re Clarksburg Light & Heat Co., P. U. R. 1928B, 290, 322-325; Re Pittsburgh & West Virginia Gas Co., P. U. R. 1927D, 844, 851; *South Carolina*—Re Rock Hill Tel. Co., P. U. R. 1928E, 221, 230, "We are of opinion that the cost of the property is the only possible reasonable authority upon which depreciation can be calculated. Depreciation is a reserve to equalize retirements and not a reserve to equalize replacements. A rate of depreciation based upon original cost, even, is little more than an intelligent guess; but based upon reproduction costs is the blindest kind of speculation. With the known original cost of a unit and an engineer's estimate of its service life and salvage value, . . . some semblance of accuracy might be reached. To guess its service life and salvage value is bad enough but who would venture to guess what it would cost to reproduce it ten or twenty years thereafter. . . . Depreciation reserve is intended to keep the investment level but not to insure the hazards of varying future."

In its second report in the instant case the Commission said: "The plan of providing for retirements at cost is that followed by the Interstate Commerce Commission and the utility regulatory commissions of most of the states, and by all other utilities under the jurisdiction of this Commission." P. U. R. 1929A, 180, 181.

The cost basis is required in the following classifications of accounts prescribed by the Commissions of: *Colorado*—Uniform System of Accounts for electric light and power utilities, 1915, account no. 351, pp. 29-30, account no. 775, pp. 67-68; Uniform System of Accounts for gas utilities, 1916, account no. 351, p. 28, account no. 775, pp. 56-57; Uniform System of Accounts for water utilities, 1920, account no. 351, pp. 25-26, account no. 775, pp. 65-66; *California*—Uniform Classification of Accounts for telephone companies, 1913, pp. 54-55; for water corporations, 1919, pp. 14-15, account no. 29; for gas corporations, 1915, account no. 29, p. 15; for electric corporations, 1919, account no. 29, p. 15; *Connecticut*—Uniform System of Accounts for water companies, 1922, account no. 180, p. 17; *Georgia*—Uniform System of Accounts for telephone companies, 1920, pp. 6-7, account no. 12, p. 12, account no. 19, p. 16; *Idaho*—Uniform System of Accounts for water corporations, 1914, account 402, pp. 92-93; account W6, p. 10; for electric light and power companies, 1914, account 54, p. 29, account 215, p. 95; *Indiana*—Uniform System of Accounts for water utilities, 1920, account 370, p. 52, account 335, p. 33;

end of the useful life of the plant in the business, the aggregate of the sums set aside will (with the salvage value) suffice to provide an amount equal to the original cost."[42] I know of nothing in the Federal Constitution, or in the decisions of this Court, which should lead us to reject, in determining net profits, the rule sanctioned by the universal practice of business men and governmental departments. For, whether the expense in plant consumption can be more nearly approximated by using a depreciation charge based on original cost or by one based upon fluctuating present values is a problem to be solved, not by legal reasoning, but by the exercise of practical judgment based on facts and business experience. The practice of using an annual depreciation charge based on original cost[43] when determining for purposes of investment,

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for electric utilities, 1920, account 297, p. 73, account 309, p. 46; for heating utilities, 1920, account 22, p. 18, and account 118, p. 35; for electric railways, 1913, p. 52-53; *Kansas*—Uniform System of Accounts for class D telephone companies, 1920, p. 4; *Massachusetts*—Uniform System of Accounts for gas and electric companies, 1921, account G678, p. 96, E678, p. 118, also pp. 27-28; *Minnesota*—Uniform System of Accounts for telephone companies class C and D, 1918, accounting circular no. 52, account 360, pp. 24-25; *Missouri*—Uniform System of Accounts for class D telephone corporations, Public Service Commission General Order No. 22, 1918, pp. 9-10; *Montana*—Uniform Classification of Accounts for gas utilities, 1913, pp. 20-21, 35; for electric utilities (undated but after 1919), pp. 25, 42-43; for telephone utilities, 1913, pp. 22, 35; for water utilities (undated but after 1919), 26, 42; for street railways, 1913, 26 41; *New Hampshire*—Uniform Classification of Accounts for gas utilities, Accounting Circular No. 2, 1914, account 220, p. 88, account 98, p. 53-4; *New Jersey*—Uniform System of Accounts for electric light, heat and power utilities, 1915, account 215, pp. 26-27, account 494, p. 77; for street or traction railway utilities, 1919, p. 18 (the accounts here are called "Accrued Amortization of Capital" and "General Amortization" instead of "Depreciation Reserve" and "Depreciation Account" or "Expense"); *Pennsylvania*—Uniform Classification of Accounts for common carriers by motor vehicle, Class A, 1928, account 179, p. 31-32; class B, 1928, account 179, p. 26; class C, 1928, p. 20. No information has been found about the practice in the States not listed.

[42]The Railways must hereafter assume the anomalous position of classing the additional $755,116 as an operating expense in its report to the Commission, and as part of its net income, in its income tax returns.

[43]When original cost is not known, or when property is acquired in some unusual way not involving purchase, some other base must, of course, be taken. But it is always a stable one. Original cost, as used in this opinion includes other such stable bases. Compare Revenue Act of 1928, Act of May 29, 1928, ch. 852, Sec. 113, 45 Stat. 791, 818; Interstate Commerce Commission rules cited in notes 26 and 27, *supra*.

taxation or regulation, the net profits of a business, or the return upon property, was not adopted in ignorance of the rule of *Smyth* v. *Ames,* 169 U. S. 466. That decision, rendered in 1898, antedates the general employment of public accountants;[44] and also antedates the general introduction here of the practice of making a depreciation charge. The decision of the Court of Appeals of Maryland here under review, as well as *State ex rel. Hopkins* v. *Southwestern Bell Telephone Co.,* 115 Kans. 236[45] and *Michigan Public Utilities Commission* v. *Michigan State Telephone Co.,* 228 Mich. 658,[46] were all decided after this Court reaffirmed the rule of *Smyth* v. *Ames* in *Southwestern Bell Telephone Co.* v. *Public Service Commission,* 262 U. S. 276. But since this decision, as before, the Bell Telephone companies have persisted in basing their depreciation charges upon the original cost of the depreciable property, *Board of Public Utility Coms.* v. *New York Tel. Co.,* 271 U. S. 23, 27. And they have insisted that the order of the Interstate Commerce Commission requiring a depreciation charge, 118 I. C. C. 295, should be so framed as to permit the continuance of that accounting practice.[47] The protest of the railroads, in that proceeding, against basing the charge on cost was made for the first time in 1927, in their petitions for a rehearing. And this

[44]The first American statute providing for examination of accountants and the use of the title C. P. A. was enacted by New York in 1896. Accountants' Handbook, edited by E. A. Saliers, p. 1326.

[45]In that case, the Special Commissioner to whom the case was referred, stated in his opinion (printed as an Appendix to the opinion of the Supreme Court, pp. 271-322, at p. 292), that if the return is figured on the present value of the utility's property, then the depreciation allowance must also be so figured. The Supreme Court did not mention this question in its opinion.

[46]The Michigan Supreme Court made a statement similar to that of the Special Commissioner in the Kansas case, but did not disturb the finding of the Commission. The court made no reference to the insurmountable practical difficulties presented.

[47]Telephone and Railroad Depreciation Charges, 118 I. C. C. 295, 301; testimony on behalf of the Bell System Companies, upon rehearing, March 19, 20, 21, 1928 (printed by American Tel. & Tel. Co.), pp. 6, 11-13, 98. See their brief submitted on original argument, p. 48: "The amount of the depreciation expense is the cost of the property used up; that is, it is the dollars consumed. Therefore it is the cost less the salvage realized at retirement." Also original record, May 1, 1923, pp. 12, 13, 20; Proposed Report of August 15, 1929, p. 14; Preliminary Report of Depreciation Section, Docket No. 14700, note 39, *supra,* pp. 6-7.

protest came only from those who insist that no depreciation charge whatsoever shall be made.[48]

To use a depreciation charge as the measure of the year's consumption of plant, and at the same time reject original cost as the basis of the charge, is inadmissible. It is a perversion of this business device. No method for the ascertainment of the amount of the charge yet invented is workable if fluctuating present values be taken as the basis. Every known method contemplates, and is dependent upon, the accumulation or credit of a fixed amount in a given number of years. The distribution of plant expense expressed in the depreciation charge is justified by the approximation to the fact as to the year's plant consumption which is obtained by applying the doctrine of averages. But if fluctuating present values are substituted for original cost there is no stable base to which the process of averaging can be applied. For thereby the only stable factor involved in fixing a depreciation charge would be eliminated. Each year the present value may be different. The cost of replacement at the termination of the service life of the several units or of the composite life cannot be foretold.[49] To use as a measure of the year's consumption of plant a depreciation charge based on fluctuating present values substitutes conjecture

[48]In Telephone and Railroad Depreciation Charges, 118 I. C. C. 295, 344, the Commission said: "It is agreed by all that depreciation should be based primarily upon the original cost to the accounting company of the unit of property in question." In the petition for rehearing filed by the Presidents' Conference Committee on Valuation, however, it was stated, p. 15: "Consideration should be given to the question of whether accounting depreciation, as the order conceives it, should be estimated upon the basis of original cost or of present value, . . ." A similar statement is made for the first time in the petition for rehearing filed by the New York Central lines, at p. 5.

[49]In part, costs and values in the several future years will depend upon the general price level. As to this, even the economist can know nothing, save how the general price level has heretofore fluctuated from year to year; and that periods of rising prices have ever been followed by periods of falling prices. But cost and value in the several future years will depend in part upon factors other than the general price level. Even if the general price level for every future year were known, it would still be impossible to predict with reasonable accuracy the then cost or value of a unit then to be replaced, renewed or retired. For despite a higher general price level, the part might be procurable at smaller costs, by reason of economies introduced in its manufacture and changes in the methods and means of performing the work. See Excess Income of St. Louis & O'Fallon Ry. Co., 124 I. C. C. 3, 29, 41.

for experience. Such a system would require the consumer of today to pay for an assumed operating expense which has never been incurred and which may never arise.

The depreciation charge is frequently likened to the annual premium in legal reserve life insurance. The life insurance premium is calculated on an agreed value of the human life—comparable to the known cost of plant—not on a fluctuating value, unknown and unknowable. The field of life insurance presented a problem comparable to that here involved. Despite the large experience embodied in the standard mortality tables and the relative simplicity of the problem there presented, the actual mortality was found to vary so widely from that for which the premiums had provided, that their rate was found to work serious injustice either to the insurer or to the insured. The transaction resulted sometimes in bankruptcy of the insurer; sometimes in his securing profits which were extortionate; and rarely, in his receiving only the intended fair compensation for the service rendered. Because every attempt to approximate more nearly the amount of premium required proved futile, justice was sought and found in the system of strictly mutual insurance. Under that system the premium charged is made clearly ample; and the part which proves not to have been needed enures in some form of benefit to him who paid it.

Similarly, if, instead of applying the rule of *Smyth* v. *Ames*, the rate base of a utility were fixed at the amount prudently invested, the inevitable errors incident to estimating service life and net expense in plant consumption could never result in injustice either to the utility or to the community. For, if the amount set aside for depreciation proved inadequate and investment of new capital became necessary, the utility would be permitted to earn a return on the new capital. And if the amount set aside for depreciation proved to be excessive, the income from the surplus reserve would operate as a credit to reduce the capital charge which the rates must earn. If the Railways should ever suffer injustice from adopting cost of plant as the basis for calculating the depreciation charge, it will be an unavoidable incident of applying in valuation the rule of *Smyth* v. *Ames*. This risk, if it exists, cannot be escaped by basing the charge on present value. For this suggested escape, besides being entirely conjectural, is instinct with certainty of injustice either to the community or the Railways. The possibility of

such injustice admonishes us, as it did in deciding the constitutional questions concerning interstate commerce, *Foster Packing Co.* v. *Haydel*, 278 U. S. 1, 10, *Federal Trade Commn.* v. *Pacific Paper Assn.*, 273 U. S. 52, 64, and taxation, *Mountain Timber Co.* v. *Washington*, 243 U. S. 219, 237; *Shaffer* v. *Carter*, 252 U. S. 37, 55; *Farmers Loan & Trust Co.* v. *Minnesota*, No. 26, p. 4, decided this day, that rate regulation is an intensely practical matter.

Fifth. Public officials, investors and most large businesses are convinced of the practical value of the depreciation charge as a guide to knowledge of the results of operation. Many States require public utilities to make such a charge.[50] But most railroads some gas and electric companies and some other concerns, deny the propriety of making any annual depreciation charge.[51] They insist that the making of such a charge will serve rather to mislead than to aid in determining the financial result of the year's operations. They urge that the current cost of maintaining the plant, whether by repair, renewals or replacements, should be treated as a part of the maintenance account, at least in systems

[50] *Alabama*—Code of 1928, § 9769, p. 1758; *Arizona*—Revised Stat. 1913 (Civil Code), Tit. 9, § 2325, p. 807; *California*—Deering, Gen. Laws, 1923, Vol. 2, Act 6386, § 49, p. 2721; *Colorado*—Comp L. 1921, § 2945, p. 928; *Idaho* Comp. Stat. 1919, Vol. 1, § 2473, p. 703; *Illinois*—Cahill's Rev. Stat. 1929, ch. 111a, § 29, p. 2045; *Indiana*—Burns Ann. Stat. 1926, Vol. 3, § 12693-12696, p. 1245; *Massachusetts*—Acts 1921, ch. 268, § 1, p. 308, inserting new section 5A after § 5, Mass. Gen. L. 1921, p. 1624; Gen. L. 1921, Vol. 2, ch. 164, § 57, p. 1818; *Minnesota*—Gen. Stat. 1923, § 5305, p. 733, Mason's Stat. 1927, § 5305, p. 1107; *Missouri*—Rev. Stat. 1919, §§ 10470, 10488 and 10512, pp. 3250, 3266, 3283; *Nebraska*—Constitution Art. 10, § 5 (Comp. Stat. 1922, p. 96); *New Hampshire*—P. L. 1926, Vol. 2, ch. 240, §§ 9, 10, 11, p. 936; *New Jersey*—1911-1924, Cum. Supp. to Comp. Stat. Vol. 2, *167-17(*t*), p. 2883; *Ohio*—Throckmorton's Ann. Code, 1929, §§ 614-49 and 614-50, p. 161; *Oregon*—Olson's Oreg. L. 1920, Vol. 2, § 6046, p. 2422; *Pennsylvania*—Stat. 1920 (West Pub. Co.), §§ 18066, 18146, pp. 1742, 1752; *Tennessee*—Shannon's Ann. Code, 1926 Supp., § 3059a88(c), p. 733; *Wisconsin*—Stat. 1925, 196.09, p. 1550. Most of these statutes require the maintenance of a separate depreciation fund. Some require only a reserve. In Maryland, the Commission's power over accounting methods is held to include the power to require depreciation accounting, but not the maintaining of a separate fund. See Havre de Grace Bridge Co. *v.* Public Service Comm., 132 Md. 16.

[51] See note 21, *supra;* G. O. May, Carrier Property Consumed in Operation and the Regulation of Profits, 43 Q. J. Ec. 208-14; R. A. Carter and W. L. Ransom, Depreciation Charges of Railroads and Public Utilities, a memorandum filed with the depreciation section of the Bureau of Accounts of the Interstate Commerce Commission (1921).

consisting of large and diversified properties intended for continuous operation and requiring a constant level of efficiency. They insist that, in such systems, retirements, replacements and renewals attain a uniform rate and tend to be equal each year; that, therefore, no great disproportion in revenues and operating expenses in the various years results if the whole expenditure made for renewals or replacements in any year is treated as an expense of operation of that year and the retirements of property are not otherwise reflected in any specific charge. They admit that it may be desirable to create a special reserve, to enable the company to spread the cost of retiring certain large units of property over a series of years, thus preventing a disproportionate burden upon the operations of a single year. But they say that such a reserve is not properly called a depreciation reserve. Moreover they contend that when a large unit is retired, not because it has been worn out but because some more efficient substitute has been found, the cost of retirement should be spread over the future, so that it may fall upon those who will gain the benefit of the enhanced efficiency. Compare *Kansas City Southern Ry.* v. *United States*, 231 U. S. 423, 440-441. Under the replacement method of accounting advocated by the railroads and others there is no depreciation charge and no depreciation reserve. Operating expenses are charged directly with replacements at their cost. This method does not concern itself with all retirements, but only with retirements which are replaced.[52]

Despite the seemingly unanswerable logic of a depreciation charge, they oppose its adoption, urging the uncertainties inherent in the predetermination of service life and of salvage value,

[52] A modification of the depreciation reserve method is the "retirement reserve" recommended by the National Association of Railroad and Utilities Commissioners. This reserve does not involve necessary periodic charges of specific amounts to operating expenses. To this reserve are credited "such amounts as are charged to the operating expense account . . . appropriated from surplus, or both, to cover the retirement loss represented by the excess of the original cost plus cost of dismantling, over the salvage value of final capital retired from service." To the operating expense, "Retirement Expense" are charged "amounts . . . in addition to amounts appropriated from surplus, to provide a reserve against which may be charged the original cost of all property retired from service, plus cost of dismantling, less salvage." Proceedings, 37th Ann. Convention, 1925, pp. 441, 458; 32nd Ann. Conv. 1923, Appendix 1, pp. 21, 76, 106, Appx. 2, p. 21, 88.

and the disagreement among experts as to the most equitable plan of distributing the total net plant expense among the several years of service. They point out that each step in the process of fixing a depreciation charge is beset with difficulties, because of the variables which attend every determination involved. The first step is to estimate how long the depreciable plant will remain in service. Engineers calculate with certitude its composite service life by applying weighted averages to the data concerning the several property units. But their exactitude is delusive. Each unit has its individual life dependent upon the effect of physical exhaustion, obsolescence, inadequacy and public requirement.[53] The physical duration of the life depends largely upon the conditions of the use; and these cannot be foretold. The process of obsolescence is even less predictable. Advances in the arts are constantly being made which would require retirement at some time, even if the unit were endowed with perpetual physical life. But these advances do not proceed at a uniform pace. The normal progress of invention is stimulated or retarded by the ever changing conditions of business. Moreover, it is the practical embodiment of inventions which produces obsolescence; and business conditions deter-

[53]The adequacy of a depreciation charge depends, among other things, upon the liberality of the particular concern's practice in respect to maintenance, 81 Amer. Soc. Civil Eng. Transactions (1917), 1490; R. H. Montgomery, Auditing Theory And Practice (1921) Vol. 1, p. 625. It depends in part upon the scope of the causes of retirement to be covered by it. As to what is the proper scope, opinion differs widely. The telephone companies (Bell System) contend that the charge should cover all causes of retirement not provided for by ordinary maintenance charges, including extraordinary casualties like storm and fire. 118 I. C. C. 340. Others insist that the charge should not include any allowance for contingent or presently unascertainable obsolescence, inadequacy, changes in the art, public requirements, storm casualties, or extraordinary repairs or expense of similar character. 118 I. C. C. 341. Still others insist that the charge should cover only exhaustion due to wear and tear and lapse of time, collectively called superannuation, but not obsolescence, inadequacy and the like, which are said to be precipitate in their operation. The Proposed Report of the Interstate Commerce Commission on Telephone and Railroad Depreciation Charges, Docket Nos. 14700 and 15100, August 15, 1929, pp. 27-28, defines depreciation as "the loss in service value not restored by current maintenance and incurred in connection with the consumption or prospective retirement of property in the course of service from causes against which the carrier is not protected by insurance, which are known to be in current operation, and whose effect can be forecast with a reasonable approach to accuracy."

mine even more largely the time and the extent to which new inventions are embodied in improved machines. The march toward inadequacy, as distinguished from obsolescence, is likewise erratic.

The protestants point out that uncertainty is incident also to the second step in the process of fixing the appropriate depreciation charge. A plant unit rarely remains in service until consumed physically. Scrap remains; and this must be accounted for, since it is the net expense of the exhaustion of plant which the depreciation charge is to cover. Such scrap value is often a very large factor in the calculation of plant expense.[54] The probable salvage on the unit when retired at the end of its service life must, therefore, be estimated. But its future value is never knowable.

And, finally, the protestants show that after the net expense in plant consumption is thus estimated, there remains the task of distributing it equitably over the assumed service life—the allocation of the amount as charges of the several years. There are many recognized methods for calculating these amounts, each method having strenuous advocates; and the amounts thus to be charged, in the aggregate as well as in the successive years, differ widely according to the method adopted.[55] Under the straight line method, the aggregate of the charges of the several years equals the net plant expense for the whole period of service life; and the charge is the same for all the years. Under the sinking fund method, the aggregate of the charges of the several years is less

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[54] In the case of telephone companies the value of the salvage recovered runs as high as 45 per cent of the original cost of the property. Testimony of Dr. M. R. Maltbie, note 16, *supra*, pp. 1459-60.

[55] Thus, if a unit costs $100, has a service life of 25 years and no salvage value, and the rate of interest is 5 per cent., the charge to operating expense for depreciation in each of the following years would be:

Year	Under Straight Line Method	Under Sinking Fund Method	Under Fixed Percentage of Diminishing Value Method	Under Annuity Method
5th	$4.00	$2.10	$8.05	$2.55
10th	4.00	2.10	3.21	3.25
15th	4.00	2.10	1.28	4.15
20th	4.00	2.10	.51	5.29
25th	4.00	2.10	.20	6.76
The aggregate of the charges in all the years at the end of the 25th year would be:	$100.00	$52.38	$99.00	$100.00

See E. A. Saliers, *op. cit.*, note 11, *supra*, 144, 148, 154, 161.

than the net plant expense for the whole period; because the proceeds of each year's charge are deemed to have been continuously invested at compound interest and the balance is assumed to be obtained from interest accumulations. Other methods of distributing the total charge produce still other results in the amount of the charges laid upon the operating expense of the several years of service.[56]

We have no occasion to decide now whether the view taken by the Interstate Commerce Commission in *Telephone and Railroad Depreciation Charges,* 118 I. C. C. 295 or the protest of the railroads, gas and electric companies should prevail.[57] For in neither event was the Court of Appeals justified in directing an increase in the allowance. The adequacy of a depreciation charge is dependent in large measure upon the practice of the individual concern with respect to its maintenance account. The Commission found that the Railways' property was well maintained and that the allowance of $883,544, together with the usual maintenance charges, would be adequate to keep the property at a constant level of efficiency. It found further, on the basis of the Company's experience, that the charges previously allowed had served "fairly well" to take care of current depreciation and retirements. The

[56]Other methods are: reducing balance; annuity; compound interest or equal annual payment; unit cost; working hour; sum-of-the year-digits. See E. A. Saliers, *op. cit.*, note 11, *supra*, 129-179; R. B. Kester, Accounting Theory and Practice (1918), Vol. 2, 150-186; J. B. Canning, The Economics of Accountancy (1929) 265-309; 81 Am. Soc. Civil Eng. Transactions (1917) 1463-1484.

[57]Nor need we express an opinion on the relation between a utility's depreciation reserve and the valuation of the accrued depreciation of its property. See Proposed Report of the Interstate Commerce Commission, note 14, *supra*, at pp. 20-24. While it is true that the annual depreciation charge does not purport to measure the current actual consumption of plant, it may be that the credit balance in the depreciation reserve is good evidence of the amount of accrued depreciation. See New York Telephone Co. *v.* Prendergast, District Court, S. D. N. Y., decided November 7, 1929. It may also be that so much of the depreciation reserve as has not been used for retirements or replacements should be subtracted from the present value of the utility's property in determining the rate base, on the theory that the amounts thus contributed by the public represent a part payment for the property consumed or to be consumed in service. Compare Burns' Ann. Ind. Stat. (1926), Vol. 3, §§ 12693-12696, p. 1245. These matters are not involved in the case at bar and as to them no opinion is expressed.

depreciation charge was established by the Railways in 1912 and was fixed by it, of its own motion, at 5 per cent. of the gross revenues. The charge at that rate had been continued ever since and had yielded each year an increasing sum. For the gross revenues had grown steadily. In the early years, they grew through increase of the number of passengers carried; since 1919, through the repeated increases in the rate of fare. In nearly every year, the allowance had exceeded the charges for retirements. After charging retirements, whether replaced or not, to the reserve, there remained a credit, on August 31, 1927, of $1,413,793. The allowance of $883,544 is equal to 5 per cent. of the estimated gross revenues for 1928. The increase of this allowance for 1928 over that for 1914 was greater proportionately than the increase of the 1928 value of the Railways' property over its 1914 value.[58]

The estimated charge of $883,544 was thus clearly ample as the year's share of the expense of plant retirement based on cost. But even if the annual depreciation allowance could be made to correspond with the actual consumption of plant, there was nothing in the record to show that the value of the part of plant to be consumed in 1928 would exceed that amount. Nor is there anything in the record or in the findings to show that $883,544, together with the usual maintenance charges and under the improved methods of construction, would be inadequate to provide, at the prices then prevailing, for the replacements required in that year, and also for the year's contribution to a special reserve under the plan advocated by the railroads before the Interstate Commerce Commission. On the contrary, the Company's history[59] and the present advances in the street railway industry strongly indicate that, by employing new equipment of lesser value,[60] the Railways could render more efficient service at smaller operating cost. Neither the trial court nor the Court of Appeals made any finding on these matters. The Commission's finding that $883,544 was an

[58] In determining the reproduction cost of the Company's depreciable property, the Commission applied an index figure of 1.54 to the 1914 value. P. U. R. 1926C, 441, 464. If the depreciation charge for 1914, $469,395, is multiplied by the same index figure, the product is $160,676 less than the allowance originally made for 1928. The additions to plant since 1914, $7,500,000, required a proportional increase in the depreciation charge of only $145,500.

[59] See Re United Rys. & Elec. Co., P. U. R. 1928C, 604, 633-4.

[60] See 73 Electric Ry. Journal (1929) 693, 705, 758, 831, 843.

adequate depreciation charge should, therefore, have been accepted by the Court of Appeals, whether the sum allowed be deemed a depreciation charge properly so called, or be treated as the year's contribution to a special reserve to supplement the usual maintenance charges.

It is clear that the management of the Railways deemed the charge of 5 per cent. of gross revenues adequate. On that assumption it paid dividends on the common stock in each year from 1923 through 1927.[61] If the addition to the depreciation charge ordered by the Court of Appeals was proper for the year 1928, it should have also been made in the preceding five years.[62] Upon such a recasting of the accounts, no profits were earned after 1924; and there was no surplus fund from which dividends could have been paid legally. If the contention now urged by the Railways is sound, the management misrepresented by its published accounts its financial condition and the results of operation of the several years; and it paid dividends in violation of law.[63]

Mr. Justice HOLMES joins in this opinion.

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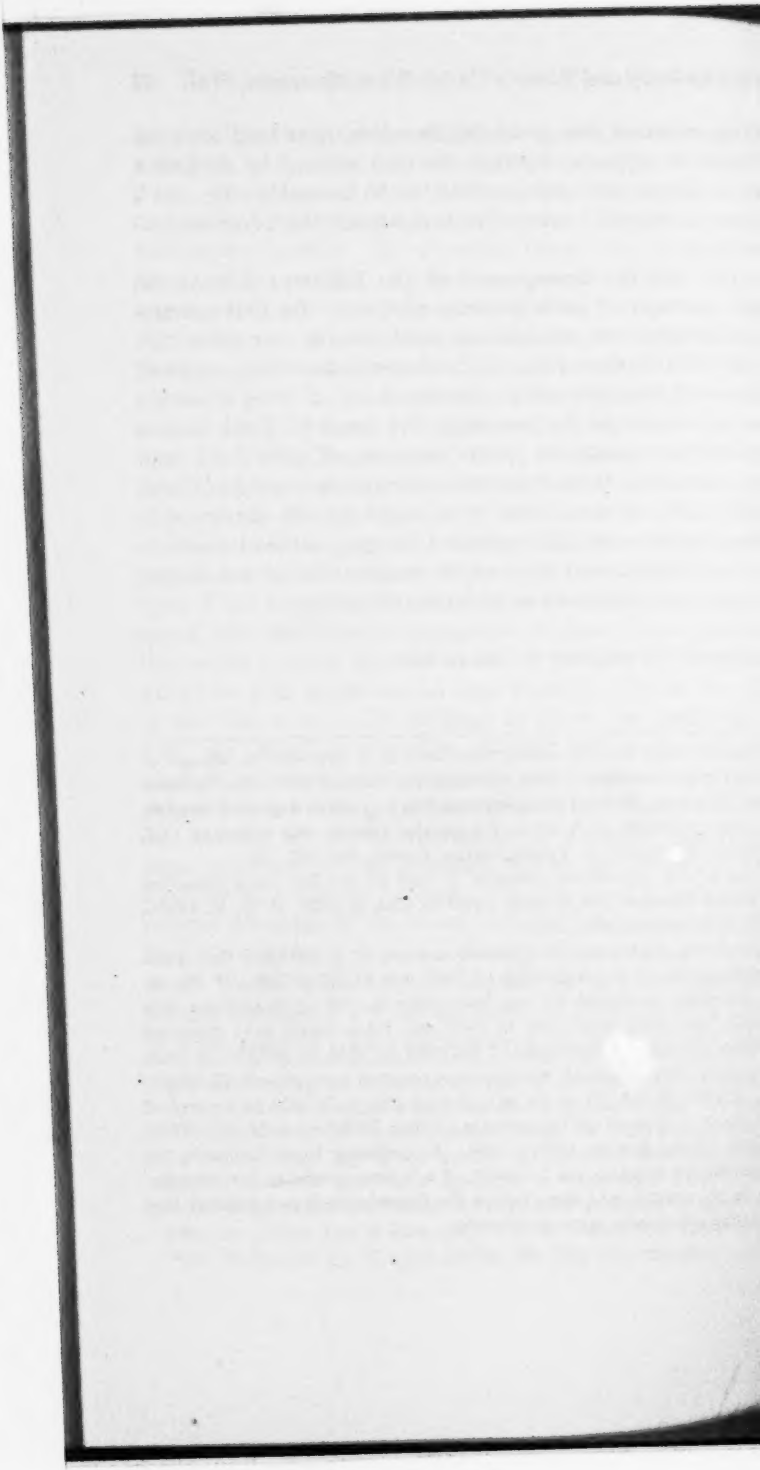
[61]The Company was not, of course, restricted to a depreciation charge of 5 per cent. of gross revenues. That was only the amount which the Commission deemed adequate. But the Company was free to reserve a greater amount, without paying dividends, if it believed a greater amount was necessary. Cf. Havre de Grace Bridge Co. *v.* Public Service Comm., 132 Md. 16.

[62]The value of the depreciable property in each of the five years preceding 1928 was almost constant and at least equal to that in 1928, P. U. R. 1928C, 604, 639, P. U. R. 1929A, 180, 183.

[63]In each of those years annual dividends amounting to $818,448 were paid. The recorded surplus at the beginning of 1923 was $1,553,097.83. If the depreciation allowance contended for had been made in each of those years, this surplus would have been wiped out in 1925 and there would have remained a deficit, after payment of dividends of $416,568 in 1925, $1,027,837 in 1926, and $2,140,146 in 1927. Instead, the Railways reported a surplus of $2,005,473 at the end of 1925, $2,020,863 at the end of 1926 and $1,588,823 at the end of 1927. See Moody's Manual of Investments (Public Utilities) 1929, pp. 375-6; Poor's Public Utility Section 1929, p. 968. In declaring these dividends, the management did not overlook the necessity of adequate provision for depreciation. For, in the several rate cases before the Commission it had insisted that the depreciation allowances were inadequate.



SUPREME COURT OF THE UNITED STATES.

Nos. 55-64.—October Term, 1929.

The United Railways and Electric Company of Baltimore, Appellant,
55 *vs.*
Harold E. West, Chairman, and J. Frank Harper and Steuart Purcell, Members, constituting The Public Service Commission of Maryland.

Harold E. West, Chairman, and J. Frank Harper and Steuart Purcell, Members, constituting The Public Service Commission of Maryland, Appellants,
64 *vs.*
The United Railways and Electric Company of Baltimore.

Appeals from the Court of Appeals of the State of Maryland.

[January 6, 1930.]

Opinion of Mr. Justice Stone.

I agree with what Mr. Justice Brandeis has said, both as to the propriety of excluding from the rate base the value of the franchise or easement donated to the Railway Company and with respect to the method of ascertaining depreciation. But of this I would say a further word.

I will assume, for present purposes, that as a result of *Smyth* v. *Ames*, 169 U. S. 466, the function of a depreciation account for rate making purposes must be taken to be the establishment of a fund for the replacement of plant rather than the restoration of cost or value of the original plant investment. But what amount annually carried to reserve will be sufficient to replace all the elements of a composite property purchased at various times, at varying price levels, as they wear out or become obsolete, is a question, not of law but of fact. It is a question which must be

answered on the basis of a prediction of the salvage value of the obsolete elements, the character of the articles which will be selected to replace them when replacement is necessary, and their cost at the time of replacement.

Obviously, that question cannot be answered by *a priori* reasoning. Experience is our only guide, tempered by the consideration of such special or unusual facts and circumstances as would tend to modify the results of experience. Experience, which embraces the past fifteen years of high price levels, and the studies of experts, resulting in the universally accepted practice of accountants and business economists, as recounted in detail by Mr. Justice Brandeis, have demonstrated that depreciation reserve, calculated on the basis of cost, has proven to be the most trustworthy guide in determining the amount required to replace, at the end of their useful life, the constantly shifting elements of a property such as the present. Costs of renewals made during the present prolonged period of high prices and diminishing replacement costs tend to offset the higher cost of replacing articles purchased in periods of lower prices. I think that we should be guided by that experience and practice in the absence of proof of any special circumstances showing that they are inapplicable to the particular situation with which we are now concerned.

Such proof, in the present case, is wanting. The only circumstance relied on for a different basis of depreciation, and one which is embraced in that experience, is the current high price level, which has raised the present reproduction value of the carrier's property, as a whole, above its cost. That, of course, might be a controlling consideration if we were dealing with present replacements or their present cost, instead of replacements to be made at various uncertain dates in the future, of articles purchased at different times in the past, at varying price levels. But I cannot say that since prices at the present moment are high, as a result of post-war inflation, a rate of return which is sufficient to yield 7.78 per cent. on present reproduction value, after adequate depreciation based on cost of the carrier's property, is confiscatory because logic requires the prediction that the elements of petitioner's property cannot, in years to come, be renewed or replaced with adequate substitutes, at less than the present average reproduction cost of the entire property—and this in the face of the facts that

the cost of replacements in the past fifteen years has been for the most part at higher price levels than at present, that the amount allowed by the Commission for depreciation has been in practice more than sufficient for all replacement requirements throughout the period of higher price levels, and that the Company has declared and paid dividends which were earned only if this depreciation reserve was adequate.

To say that the present price level is necessarily the true measure of future replacement cost is to substitute for a relevant fact which I should have thought ought to be established as are other facts, a rule of law which seems not to follow from *Smyth* v. *Ames*, and to be founded neither upon experience nor expert opinion and to be unworkable in practice. In the present case it can be applied only by disregarding evidence which would seem persuasively to establish the very fact to be ascertained.